lead a nomadic life in their boats, each boat containing an entire household. The Sulus are divided into coast Sulus and the Orang Gumber, living among the hills, and they are much above the Bajaws in character. The latter are stronger in physique, but timid and treacherous. On the coast-line of Borneo is an extraordinary mixture. At Melapi, sixty miles up the Kina Batangan, are Sundyaks, Malays, Javanese, Sulus, Bajaws, Bugis, Chinese, Arabs, Klings, and many others; while of the Buludupies, the indigenous inhabitants, there are hardly any of pure blood left. These indigenes are an interesting people, their ancestry showing distinct signs of a Caucasian type. The rest of north-eastern Borneo is inhabited by tribes of the race styled Eriaans, Dusuns, or Sundyaks, who are of Dyak blood, with perhaps an infusion of Chinese. The Chinese language, dress, etc., are entirely lost, however. Slavery of a clan or feudal type is universal, and the Mohammedan religion prevails. The Sundyaks are divided into many tribes, some of which are gaining in power. *Cf.* i. **552.** — (*Proc. roy. geogr. soc.*, v. 90.) J. W. P. [288

INTELLIGENCE FROM AMERICAN SCIENTIFIC STATIONS.

PUBLIC AND PRIVATE INSTITUTIONS.

Dudley observatory, Albany, N.Y.

Comet b, 1883 (Brooks). — By means of observations secured at the Dudley observatory on Sept. 5, 9, and 18, I derived on the 19th the following parabolic elements, marked I. The remarkable similarity of these elements to those given by Schulhof and Bossert for the Pons comet of 1812 pointed unmistakably to their identity. The elliptic elements of the Pons comet (here marked II.) are transcribed from the memoir of Schulhof and Bossert (p. 150), except that they are reduced to the mean ecliptic and equinox of 1883.0, and a value of T, derived from observations of the present apparition, is substituted.

I.		II.	
T = 1884, Jan., 25.788 (G.M.T.).		T = 1884, Jan., 25.696 (G.M.T.).	
Node	254° 13′.6	Node	254° 8′.8
Node to perihelion .	199 14 .4	Node to perihelion .	199 12 .9
Inclination	74 47 .1	Inclination	74 03 .3
Log. q.	9.87944	Log. q.	9.88930
		Eccentricity . . .	0.95527

The value of T in II. was determined by approximation from the observation of Sept. 5. The remaining observations do not indicate any important change in its value. The following ephemeris results from elements II. The geocentric positions are referred to the mean equinox of 1883.0.

Greenwich, 12 hours.	a			δ		Log. Δ	Light.
	h.	m.	s.	°	′		
Sept. 2	16	36	37	65	03.0	0.3725	.03
" 6		32	19	64	13.9	0.3648	.03
" 10		29	06	63	23.0	0.3569	.04
" 14		26	53	62	31.1	0.3487	.04
" 18		25	37	61	38.3	0.3400	.04
" 22		25	15	60	45.2	0.3310	.05
" 26		25	45	59	52.4	0.3215	.05
" 30		27	01	58	59.6	0.3115	.06
Oct. 4		29	06	58	07.5	0.3009	.06
" 8		31	57	57	16.5	0.2897	.07
" 12		35	32	56	26.5	0.2779	.08
" 16		39	52	55	37.6	0.2653	.08
" 20		44	56	54	49.9	0.2518	.09
" 24		50	47	54	03.3	0.2377	.10
" 28		57	25	53	17.8	0.2226	.12
Nov. 1	17	04	53	52	33.3	0.2065	.14
" 5		13	15	51	49.6	0.1893	.16
" 9		22	34	51	06.0	0.1708	.19
" 13		32	56	50	22.4	0.1512	.22
" 17		44	26	49	37.0	0.1302	.26
" 21		57	14	48	49.4	0.1077	.32
" 25	18	11	27	47	57.1	0.0836	.38
" 29		27	16	46	58.1	0.0580	.46
Dec. 3		44	50	45	43.2	0.0300	.57

In the light scale, .19 corresponds to that of discovery in 1812, and 1.00 to the time when the comet was reported as visible to the naked eye in the apparition of 1812. The places of the above ephemeris represent the observations already made within about 30″ in each co-ordinate, and with a very uniform minus value of 'c-o' throughout. This seems to be the fault of the elliptic elements. Any considerable change in the time of perihelion passage diminishes the discrepancy in one co-ordinate at the expense of the other.

It is remarkable that the present comet should have been picked up when its light ratio was six times as small as it was at discovery, in 1812. It was then regarded as a faint object. Were it not for the overwhelming testimony from other sources, one might doubt, on the ground of brightness, the identity between the present comet and that of 1812. The following rough ephemeris may be of interest: —

	a	δ	Light.		a	δ	Light.
1883.	h. m.	°		1884.	h. m.	°	
Dec. 3 .	18 45	+ 45.7	.6	Feb. 1 .	0 34	− 28.3	2.3
" 13 .	19 37	+ 41.7	1.0	" 11 .	1 02	− 37.2	1.5
" 23 .	20 41	+ 33.9	1.8	" 21 .	1 23	− 43.7	1.0
1884.							
Jan. 2 .	21 53	+ 22.1	3.5	Mar. 2 .	1 43	− 48.5	.6
" 12 .	23 01	+ 2.5	4.1	" 12 .	2 02	− 53.0	.4
" 22 .	23 53	− 15.2	3.0	" 22 .	2 26	− 56.2	.4

The identity of the Pons comet of 1812 with comet b, 1883, was announced in an 'associated press' despatch from the Dudley observatory on the evening of Sept. 19. LEWIS BOSS.

Sept. 21, 1883.

Massachusetts institute of technology, Boston, Mass.

Extension of the course in biology. — Advantage is at once to be taken of the extension in the building accommodations, and the improvement in the financial resources of the institute, to greatly enlarge the space heretofore given to biological work, and to increase the instructing staff of this department of the school.

The removal of the physical laboratory to the new building on Clarendon Street affords the long-desired opportunity for the expansion of the biological laboratory, heretofore confined to a single small room in the

low brick annex. The large north room (90 x 28 ft.) on the first floor of the main institute building (the Rogers Building), with its admirable light and its many facilities, will be devoted to the purposes of the natural-history course, and will be fitted up with appropriate apparatus and instruments. Within a short time, it is also anticipated that a room in the basement (being one of those now occupied by the chemical or by the metallurgical department) will be available for use in dissections and in the coarser work of a biological laboratory.

Dr. W. T. Sedgwick, a graduate of the Sheffield scientific school, and recently connected with the biological department of the Johns Hopkins university, having been appointed assistant professor of biology, will assume charge of the biological laboratory at the opening of the next school year, and will give the instruction in physiology, botany, and general biology, now provided for in the regular courses of the institute, especially in the so-called natural-history course, as well as take charge of the work of special students in these branches.

The instruction given in geology by Professor Niles, and in zoölogy and paleontology by Professor Hyatt, will be continued. Mr. W. O. Crosby has been appointed assistant professor of mineralogy and lithology, and will hereafter give, throughout the school year, the instruction which has heretofore been confined to a single term. The advantages of the extension of the chemical and physical laboratories, abundantly provided for in the new building of the institute, will be enjoyed by the students of the natural-history course, in common with those of the other regular courses.

In view of the foregoing enlargement of facilities and opportunities for study and research in the branches especially embraced in this course, it is recommended to students looking forward either to becoming naturalists, or to the subsequent study and practice of medicine.

NOTES AND NEWS.

The comet recently detected by W. R. Brooks at Phelps, N.Y., has become an object of unusual interest since its identification with the comet of 1812, the return of which has been anticipated about this time. Mr. Brooks first noticed the comet as a suspicious object on the night of Sept. 1, and directed the attention of astronomers to it, after a second observation. During the first half of September it was repeatedly observed at various places; but its great distance and consequently slow movement made it difficult to obtain trustworthy approximations to its orbit, and thus delayed the recognition of its character. Its identity with the comet of 1812 was first announced, so far as we are informed at present, by the Rev. George M. Searle of New York, in a letter published on Sept. 18. A communication from him to Harvard college observatory, with which he was formerly connected, was received there on the morning of Sept. 20, and contained a statement of the process by which he reached the interesting conclusion previously announced. This consisted in determining, from the positions of the Brooks comet, the corresponding points of intersection with Encke's orbit of 1812; the result for the time of perihelion passage being 1884, Jan., 25.17, and the longitude of the perihelion being closely accordant with that given by Encke.

Professor Boss of the Dudley observatory, as will be seen on an earlier page, arrived independently at the same conclusion by computing parabolic elements from observations of Sept. 5, 9, and 18, which exhibited a close similarity with those of the orbit of 1812. The circular which he has issued upon the subject states that he communicated his result to the associated press on the evening of Sept. 19.

The communication of Father Searle to Harvard college observatory, already mentioned, induced Mr. Chandler to examine the question, with the aid of the most recent observations. The result was to furnish further confirmation of the asserted identity; and the positions obtained at the observatory as late as Sept. 22 make it still more evident. The difference between the observed place and that resulting from the orbit of 1812, as corrected by the recent publication of Schulhof and Bossert, but with the time of perihelion passage assumed as 1884, Jan., 25.780, is as follows: —

Diff. R.A. $-0^s.1$. (O—C.)
" Decl. $+66''$.

This agreement is entirely within the uncertainty of the orbit of 1812, from the old observations.

The comet has also exhibited phenomena of great interest in regard to the development of its structure by its approach to the sun. When first observed this year, it was a very faint and small nebulous object, but the appearance of a stellar nucleus was noted at Harvard college observatory by Mr. Wendell on Sept. 3. The nucleus was afterwards less distinct. This may have been due to unfavorable conditions of observation, or it may possibly indicate a preliminary series of changes like those which the comet has just exhibited. On Sept. 21, as seen at Harvard college observatory, the comet was still very faint. A slight condensation at one place could be seen with the large equatorial, but this could hardly be called stellar. The next night, Sept. 22, the appearance of the comet had so completely changed that it was difficult to believe it the same object previously seen. It now resembled a star nearly as bright as one of the eighth magnitude. Very little nebulosity could be detected about it, but some was seen early in the evening, while the comet was sufficiently high in the sky. During the evening it appeared to be gaining perceptibly in brightness. The next night, Sept. 23, it was seen at times between clouds, and was found to have again changed its appearance. It was now even brighter than before (although still slightly inferior to a star of the eighth magnitude), but it had lost its stellar appearance, and had become blurred, regaining the ordinary character of a cometic nucleus. Traces of the development of a tail were also perceptible. The rapidity of this series of changes is very unusual, if not unexampled.